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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/773,437	02/09/2004	Koichi Watanabe	HIRA.0140	6599

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EXAMINER	
DINH, TAN X	

ART UNIT	PAPER NUMBER
2627	

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Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary	Application No.	Applicant(s)	
	10/773,437	WATANABE ET AL.	
	Examiner	Art Unit	
	TAN X. DINH	2627	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☐ Responsive to communication(s) filed on _____.

2a)☐ This action is **FINAL**. 2b)☒ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☐ Claim(s) _____ is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *1-16* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☐ The drawing(s) filed on _____ is/are: a)☐ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☒ All b)☐ Some * c)☐ None of:

1.☒ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☒ Information Disclosure Statement(s) (PTO/SB/08) Paper No(s)/Mail Date _____.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____.
5) ☐ Notice of Informal Patent Application
6) ☐ Other: _____.

1) Receipt is acknowledged of papers submitted under 35 U.S.C. 119(a)-(d), which papers have been placed of record in the file.

2) The I.D.S filed 2/09/2004 and 3/13/2007 have been considered by the Examiner. However, the Japan and/or foreign document(s), if they have not been written in English, are considered to the extent that could be understood from the English Abstract and the drawings.

Form PTO-1449 or PTO/SB/08 is(are) attached herein.

3) The title of the invention is not descriptive. A new title is required that is clearly indicative of the invention to which the claims are directed. The following title is suggested:

OPTICAL RECORDING METHOD USING MULTIPLEXER AND PLURAL PIECES OF DATA BITS.

4) The drawings are objected to because *figures 3-6,15* should be designated by a legend such as -- PRIOR ART -- since only that which is old is illustrated. See MPEP § 608.02(g).

Corrected drawings in compliance with 37 CFR 1.121(d) are required in reply to the Office action to avoid abandonment of the application.

The replacement sheet(s) should be labeled "REPLACEMENT SHEET" in the page header (as per 37 CFR 1.121(d)) so as not to

obstruct any portion of the drawing figures.

If the changes are not accepted by the Examiner, the applicant will be notified and informed of any required corrective action in the next Office action. The objection to the drawings will not be held in abeyance.

5) The following is a quotation of the first paragraph of 35 U.S.C. 112:

> The specification shall contain a written description of the invention, and of the manner and process of making and using it, in such full, clear, concise, and exact terms as to enable any person skilled in the art to which it pertains, or with which it is most nearly connected, to make and use the same and shall set forth the best mode contemplated by the inventor of carrying out his invention.

6) Claims *1-5* are rejected under 35 U.S.C. 112, first paragraph, as failing to comply with the written description requirement. The claim(s) contains subject matter which was not described in the specification in such a way as to reasonably convey to one skilled in the relevant art that the inventor(s), at the time the application was filed, had possession of the claimed invention.

Claims *1-5* recite the feature of m pieces of data input signal, n pieces of data output signals as m:n multiplexer, where $m > n \geq 2$, and the n pieces of data bits are higher speed than m pieces of data input signal, but did not provide the detail descriptions

to warranty this feature. Without this teaching, one or ordinary skill in the art cannot practicing the invention.

7) The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

> A person shall be entitled to a patent unless -
>
> 8) (b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

9) Claims *6 and 7-9* are rejected under 35 U.S.C. 102(b) as being anticipated by MORISHITA et al (5,396,480).

MORISHITA et al discloses a information recording equipment as claimed in claim 6, comprising:

an encoding circuit which encodes data to be recorded (Fig,5, encoder 71);

a recording pulse shaping circuit to which output of encoding circuit is input and which outputs m pieces of pulse signals (figures 1A, 1B and 6A show m pieces of pulse signals);

an m:n multiplexer which multiplexes the m pieces of pulse signals output from said recording pulse shaping circuit and outputs n pieces of pulse signals, where $m > n \geq 2$ (Figures 3 and 4, multiplexer 52 with m inputs WS4, WS3, WS2, and WS1 and n outputs 56, 55, 54 and 53);

a laser driver circuit which is driven by the n pieces of output signals from m:n multiplexer (Figures 3 and 4, laser driver circuits 61,60,59,58 and 57); and

a laser beam source which is driven by output of laser driver circuit (Figures 3 and 4, laser 34).

As to claim 7, MORISHITA et al shows laser driver circuit outputs a multi-pulse signal in conformity with a write strategy (Figures 1A, 1B and 6A).

As to claims 8 and 9, MORISHITA et al shows m:n multiplexer includes a clock dividing circuit and recording pulse shaping circuit uses a clock generated from clock dividing circuit as a synchronous signal (figures 3 and 4, clock generator 66 generates clock dividing circuit as a synchronous signal).

10) The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

11) This application currently names joint inventors. In considering patentability of the claims under 35 U.S.C. 103(a), the examiner presumes that the subject matter of the various claims was

commonly owned at the time any inventions covered therein were made absent any evidence to the contrary. Applicant is advised of the obligation under 37 CFR 1.56 to point out the inventor and invention dates of each claim that was not commonly owned at the time a later invention was made in order for the examiner to consider the applicability of 35 U.S.C. 103(c) and potential 35 U.S.C. 102(e), (f) or (g) prior art under 35 U.S.C. 103(a).

12) Claims *10-13* are rejected under 35 U.S.C. 103(a) as being unpatentable over MORISHITA et al (5,396,480).

MORISHITA et al discloses all the subject matter as claimed in claims 10-12, *except* to specifically show an amplitude adjusting, delay adjusting and level adjusting. However, these elements are inherent and widely used in the recording art, therefore, to use amplitude adjusting, delay adjusting and level adjusting in MORISHITA et al's optical recording method as claimed is deem obvious to some one within the level of skill in the art.

As to claim 13, the feature of using magnetic field circuit for recording information data is old and well known in magneto-optical recording device (see ABE et al, US 6,801,240, columns 1 and 2 or KIMURA, US 5,905,695, figures 4, 7 and 8).

13) Claims *14-16* are rejected under 35 U.S.C. 103(a) as being unpatentable over MORISHITA et al (5,396,480) and KIMURA (5,905,695).

MORISHITA et al discloses an evaluation equipment as claimed in claim *14*, comprises an encoding circuit (Fig,5, encoder 71), a recording pulse shaping circuit to which output of encoding circuit is input and which outputs m pieces of pulse signals (figures 1A, 1B and 6A show m pieces of pulse signals), an m:n multiplexer which multiplexes the m pieces of pulse signals output from said recording pulse shaping circuit and outputs n pieces of pulse signals, where $m > n \geq 2$ (Figures 3 and 4, multiplexer 52 with m inputs WS4, WS3, WS2, and WS1 and n outputs 56, 55, 54 and 53), a laser driver circuit which is driven by the n pieces of output signals from m:n multiplexer (Figures 3 and 4, laser driver circuits 61,60,59,58 and 57) and a control circuit unit which controls operation of the recording device (the control circuit for whole recording device), *except* to specifically show the step of controlling the operation based on a test signal. KIMURA from the same field teaches a method for recording information bits using multiple pulses and controlling the generating of multiple pulses laser based on test signals (figures 9A, 9B, 12, 13, 14A, 14B). Since the method as taught by KIMURA is old and well known in the art, one of ordinary skill in the art at the time of the invention was made would have been motivate to use the method of

controlling the recording power based of test signal in MORISHITA et al's recording device as claimed.

As to claims *15 and 16*, the feature of control board, servo board, spindle control board, track jump control board, address decode board and PLL equalizer control board are old and widely used in optical recording art (See ABE et al, US 6,801,240, figure 19, PLL control board 214, for using multiple pulses in recording includes PLL control board).

14) Claims *1-5* are rejected under 35 U.S.C. 103(a) as being unpatentable over MORISHITA et al (5,396,480) and ABE et al (6,801,240).

MORISHITA et al discloses a information recording equipment as claimed in claim 1, comprising an inputting m pieces of data bits as an input signal to a multiplexing circuit to which m pieces of data bits are input and which outputs n piece-s of data bits (hereinafter referred to as an m:n multiplexer), where $m > n \geq 2$ (figures 1A, 1B and 6A show m pieces of pulse signals), outputting n pieces of data bits which are from m:n multiplexer (Figures 3 and 4, multiplexer 52 with m inputs WS4, WS3, WS2, and WS1 and n outputs 56, 55, 54 and 53), and recording information with n pieces of data bits (Fig.3, the n pieces of data bits are recorded into optical disc by laser 34), *except* to specifically show that

the output n pieces of data bits are higher speed than input. However, this feature is old and widely used in the art as taught by ABE et al (see the column 5, line 27 to column 7, line 17). Therefore, it would have been obvious to someone within the level of skill in the art at the time of the invention was made to use the old and well know method of ABE et al in MORISHITA et al's optical recording device in order to achieve high speed recording as claimed.

As to claim 2, MORISHITA et al shows a multiple signal is formed of n pieces of data bits (figures 6A and 6B).

As to claim 3, MORISHITA et al shows multilevel recording is performed by using n pieces of data bits (figures 6A and 6B).

As to claim 4, MORISHITA et al shows n pieces of output data bits are synchronized, based on a clock generated from a single source, the clock being used to multiplex the m pieces of input data bits to the n pieces of output data bits (Fig.3, clock 66).

The features of claim 5 is not disclosed in the specification, therefore claim 5 is included in the rejection of claim 1.

15) The prior art made of record and not relied upon is considered pertinent to applicant's disclosure.

Applicant is reminded that in amending in response to a rejection of claims (if the rejection involves with any applicable

arts), the *patentable novelty must be clearly shown* in view of the state of the art disclosed by the references cited and the objection made. Applicant must also show how the amendments *avoid* such references and objections. See 37 CFR § 1.111(c).

Form PTO-892 is attached herein.

16) Any inquiry concerning this communication or earlier communications from the examiner should be directed to TAN XUAN DINH whose telephone number is (571)272-7586. The examiner can normally be reached on MONDAY to FRIDAY from 9:00AM to 5:00PM.

The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov/. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

TAN DINH
PRIMARY EXAMINER
May 23, 2007